

MY/sb 020277US

04. Februar 2005

CLAIMS

1. A sound-insulating material (1), especially for automobiles, manufactured from rubber and PUR plastic, characterized in that the rubber (12) and the PUR plastic (13) are mixed with each other, wherein the rubber (12) forms a matrix, in which a plurality of gas-filled elastic hollow bodies (14) are embedded.
2. The sound-insulating material according to Claim 1, characterized in that the rubber (12) and/or the PUR plastic (13) is a recycling material.
3. The sound-insulating material according to Claim 1 or 2, characterized in that it is composed of
70 to 99 wt% rubber (12),
1 to 20 wt% PUR plastic (13)
0.5 to 10 wt% gas-filled, elastic hollow bodies (14).

4. The sound-insulating material according to at least one of the preceding claims, characterized in that the rubber (12) is an EPDM rubber.
5. The sound-insulating material according to at least one of the preceding claims, characterized in that the gas-filled, elastic hollow bodies (14) have a shell of mixed polymer.
6. The sound-insulating material according to at least one of the preceding claims, characterized in that it has a density of less than 1.5 kg/cm^3 , preferably less than 1.0 kg/cm^3 .
7. A method of manufacturing a sound-insulating material (1), especially for automobiles, characterized in that the thermoplastic rubber particles and PUR plastic particles are extruded, while adding a foaming agent to a foam-like mix material, wherein the foaming agent is added in form of foaming agent containing micro-hollow bodies (14), which have a shell of polymer mix and expand during heat treatment.

8. The method according to Claim 7, characterized in that as thermoplastic rubber particles recycling material is used which is obtained by comminution of material containing EPDM rubber.
9. The method according to Claims 7 or 8, characterized in that as PUR plastic particles recycling material is used that is obtained by comminution of material containing PUR foamed material.
10. The method according to one of Claims 7 through 9, characterized in that, referred to the sound-insulating material (1) to be manufactured, 70 to 99 % wt% thermoplastic rubber particles, 1 to 20 wt% PUR plastic particles, and 0.5 to 10 wt% microhollow bodies containing foaming agent are fed to an extrusion device (2).
11. The method according to one of Claims 7 through 10 characterized in that microhollow bodies (14) containing the foaming agent are spherically shaped.

12. The method according to one of Claims 7 through 11, characterized in that the thermoplastic rubber particles, the PUR plastic particles and the microhollow bodies containing the foaming material are fed to the extrusion device in separate charges.

13. The method according to one of Claims 7 through 12, characterized in that the extrusion device (2) has an entry zone (3), a transition and compression zone (5) and an exit zone (6) with a nozzle (7) following thereon and is heated such that during extrusion the following temperatures exist:
40 to 50 °C in the region of the entry zone,
110 to 130 °C in the region of the transition and compression zones,
120 to 150 °C in the region of the exit zone, and
120 to 150 °C in the region of the nozzle.